REMARKS

In the outstanding Office Action mailed June 7, 2007 (hereinafter, "Office Action"), the Examiner objected to the Abstract; objected to the Oath/Declaration; rejected claims 3, 8, and 9 under 35 U.S.C. § 112, ¶ 2; rejected claims 1, 12, and 14-15 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,111,979 to Katto (hereinafter, "*Katto*") in view of U.S. Patent No. 6,097,394 to Levoy et al. (hereinafter, "*Levoy*") and U.S. Patent No. 5,659,631 to Gormish et al. (hereinafter, "*Gormish*"); rejected claims 2-9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy*, *Gormish*, U.S. Patent Publication No. 2002/0126313 to Namizuka (hereinafter, "*Namizuka*") and U.S. Patent Publication No. 2003/0072496 to Woodell et al. (hereinafter, "*Woodell*"); rejected claim 10 under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy*; rejected claims 13 and 16 under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view *Levoy*, *Gormish*, and *Namizuka;* rejected claim 18 under 35 U.S.C. § 103(a) as being unpatentable over *Levoy* in view of *Gormish* and *Woodell;* and rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy*, *Gormish*, *Namizuka, Woodell* and U.S. Patent No. 6,333,743 to Gossett et al. (hereinafter "*Gossett*").[1]

By this amendment, Applicants have amended claims 1, 2, 4, 6, 11, 12, and 18, and canceled claim 3 without prejudice or disclaimer. No new matter has been added. Accordingly, claims 1-2 and 4-19 remain pending.

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[1] While the Office Action Summary indicates that claim 17 has been rejected, the body of the Office Action provides no details as to the basis of the rejection of claim 17. Since claim 17 depends from claim 15, which the Examiner rejected under 35 U.S.C. § 103(a) as being obvious over *Katto*, *Levoy*, and *Gormish*, Applicants assume that claim 17 is also rejected under §103(a) as being obvious over *Katto*, *Levoy*, and *Gormish*.

In light of the foregoing amendments and based on the remarks presented below, Applicants respectfully traverse the objection to the specification and the Declaration. In addition, Applicants respectfully traverse the rejections of claims under 35 U.S.C. §§ 103(a) and 112, ¶ 2, and request allowance of pending claims 1-2 and 4-19.

I. Specification

The Examiner objected to the Abstract because "[it] should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words." Office Action, p. 2. Accordingly, Applicants have amended the Abstract to recite:

> "A texture image compressing device includes a separating unit configured to separate intensity maps, including intensity values and light source-independent texture images, those images including color components from a plurality of texture images corresponding to different light source directions and different viewpoint directions. The device includes an intensity map compressing unit configured to compress the intensity maps to generate compressed intensity maps and representative intensity maps that are codebooks of the compressed intensity maps, a light source-independent texture image compressing unit configured to compress the light source-independent texture images to generate light source-independent texture compressed images and color component conversion tables that are codebooks of the light source-independent texture compressed images, and a compressed texture generating unit configured to generate compressed textures by combining the compressed intensity maps, the representative intensity maps, the light source-independent texture compressed images and the color component conversion tables."

This replacement abstract is not more than 150 words in length, uses no legal phraseology, and avoids the use of phrases which can be implied. A marked-up copy of the abstract may be found on page 2 of this Reply, and a clean copy is attached at the

end of this Reply. Therefore, in light of the foregoing amendments, Applicants respectfully request reconsideration and withdrawal of the objection to the Abstract.

II. Oath/Declaration

The Examiner has objected to the declaration, stating that "[t]he oath or declaration is defective because: [i]t does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability . . ." and "[t]he clause regarding 'willful false statements ... ' required by 37 CFR 1.68 has been omitted." *Id.*

Applicants respectfully traverse the objection to the Declaration. In particular, the Declaration filed August 12, 2004 (hereinafter, "Originally-Filed Declaration") clearly includes the statement, "I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56." Originally-Filed Declaration, p. 1. In addition, the Originally-Filed Declaration also clearly includes the statement, "I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon." *Id.* at p. 2.

Thus, the Originally-Filed Declaration includes the statements required under 37 C.F.R. §§ 1.56 and 1.68, which the Office Action incorrectly identifies as being omitted. Accordingly, the Originally-Filed Declaration is in compliance with 37 CFR 1.67(a), as

outlined in the Office Action, and Applicants respectfully request that the Examiner withdraw the objection to the declaration.

III. Rejection Under 35 U.S.C. § 112

Applicants respectfully traverse the rejection of claims 3, 8, and 9 under 35 U.S.C. § 112, second paragraph. Specifically, the claims stand rejected "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regards as the invention." Office Action, p. 3. In addition, the Examiner states that "[f]or further examination, the examiner will consider claims 3, 8 and 9 are dependent claims of claim 1." Office Action, p. 3.

While Applicants traverse the rejection under § 112, second paragraph, Applicants have nevertheless canceled claim 3, thereby rendering the rejection of claim 3 under § 112 moot.

With respect to claims 8 and 9, the Examiner has provided no legal basis (nor any basis at all) upon which the Examiner bases the rejection under § 112. Specifically, the *M.P.E.P.* states that "[i]n reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing warning to others as to what constitutes infringement of the patent." *M.P.E.P.* § 2173.02.

Applicants respectfully assert that the claims fully comply with the requirements of 35 U.S.C. § 112, second paragraph. For example, claim 8 recites "[t]he texture image compressing device of claim 2, wherein the light source-independent texture

image compressing unit vector-quantizes the light source independent texture images." Both "the light source-independent texture image compressing unit" and "the light source independent texture images" are first introduced in independent claim 1, from which claim 2 depends. Accordingly, claim 8 is not indefinite.

Claim 9 recites "[t]he texture image compressing device of claim 2, wherein the intensity map correction image compressing unit vector-quantizes the intensity map correction images." Both "the intensity map correction image compressing unit" and "the intensity map correction images" are first introduced in claim 2, from which claim 9 currently depends. Moreover, "consider[ing] claim[] . . . 9 [to be a] dependent claim[] of claim 1," as the Examiner asserts is being done on page 3 of this Office Action, would *introduce* issues of indefiniteness under 35 U.S.C. § 112, second paragraph.

Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of claims under 35 U.S.C. § 112, second paragraph. Should the Examiner maintain the rejection under § 112, Applicants respectfully request the Examiner the provide the legal basis for such a rejection.

IV. Rejection Under 35 U.S.C. § 103(a)

Applicants respectfully traverse the rejection of claims 1-2 and 4-19 under 35 U.S.C. § 103(a) as being unpatentable over the cited art. A *prima facie* case of obviousness has not been established.

The Examiner has the initial burden of factually supporting any *prima facie* conclusion of obviousness. *See M.P.E.P.* § 2142, 8th Ed., Rev. 6 (Sept. 2007). To do so, the Examiner must first establish the Graham factual findings, and then make a determination whether the claimed invention "as a whole" would have been obvious to a

person of ordinary skill in the art at the time of the invention. *Id.*; *see also M.P.E.P.* § 2141(IV). The Graham inquiries include determining the scope and content of the prior art; and resolving the level of ordinary skill in the pertinent art. *See M.P.E.P.* § 2141(II). To make the determination of whether the claimed invention would have been obvious based on the factual findings under Graham, the Examiner must consider factors such as the predictability of the results of combining the prior art references or substituting one known element for another; whether a known technique was used to improve similar devices in the same way; whether a known technique was applied to a known device ready for improvements to yield predictable results; whether there were design incentives or other market forces prompting variations of known work in one field for use in the same or a different field; and the teaching, suggestion, and motivation contained in the prior art references. *See M.P.E.P.* § 2141(III). The key to supporting any rejection under 35 U.S.C. § 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. *See M.P.E.P.* § 2142.

In this case, the rejection of claims 1-2 and 4-19 under 35 U.S.C. § 103(a) is improper because the Examiner erred in at least the factual findings, particularly in the ascertainment of any differences between the claimed invention and the prior art.

A. Claim 1

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy* and *Gormish*. Neither *Katto*, nor *Levoy*, nor *Gormish*, nor any obvious variant thereof, teach or suggest, *inter alia*, "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of

rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images," as recited in claim 1. The Office Action appears to rely on *Katto* for this recitation, as discussed in the rejection of claims 1 and 3. Office Action, pp. 3 and 6. However, the Office Action is incorrect.

Instead, *Katto* teaches an encoding system in which "two-dimensional natural images are obtained from an object in a three-dimensional space by a mono-view-point or multi-view-point imaging system to generate intensity (color brightness) maps, area maps and velocity maps, and also depth maps . . . ." *Katto*, col. 5, ll. 49-56. *Katto* teaches that "[m]ultiplexing means 15 multiplexes compressed data which are supplied from the image compression means 11 and the depth representative value compressing means 14, and then transmit[s] or store[s] it as a compression stream." *Id.* at col. 6, ll. 22-26.

Katto fails to teach "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images . . . ," as recited in amended independent claim 1.

Because *Katto* fails to teach "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images . . . ," *Katto* cannot further teach "a separating unit configured to rearrange a plurality of texture images . . . by grouping pixels included in the plurality of texture images per view

point direction and coordinate on each of the texture images," as also recited in amended independent claim 1. And because *Katto* fails to teach "a separating unit configured to rearrange a plurality of texture images . . . ," *Katto* cannot further teach "[the] separating unit configured to . . . separate intensity maps . . . from the plurality of rearranged texture images," as additionally recited in amended independent claim 1.

Levoy fails to overcome the deficiencies of *Katto*, as set forth above, in that *Levoy* also does not teach, *inter alia*, "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images," as recited in amended independent claim 1.

In contrast, *Levoy* teaches that "a light field 110 is partitioned into tiles, which are encoded using vector quantization (VQ) 112 to form an array of codebook indices. *Levoy*, col. 12, ll. 37-39. "[T]he codebook 114 and the array of indices 116 are further compressed using Lempel-Ziv (LZ) coding" to obtain an output bit stream 118. *Id.* at col. 12, ll. 40-41.

Gormish fails to overcome the deficiencies of *Katto* and *Levoy*, as set forth above, in that *Gormish* also does not teach, *inter alia*, "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images

per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images," as recited in amended independent claim 1.

Instead, *Gormish* teaches "[a] data compression system [that] separates input data into color planes prior to compression." *Gormish*, Abstract. In *Gormish*, "color planes are ordered by density and the densest color plane is coded first." *Id.* In the alternative, Gormish discloses that "pixel color values are represented by vectors with components thereof separately coded by subcolor planes." *Id.*

Thus, neither *Katto,* nor *Levoy*, nor *Gormish*, taken alone or in any reasonable combination, teach or suggest, *inter alia*, "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images," as recited in amended independent claim 1.

For at least this reason, the Office Action has not established a *prima facie* case of obviousness regarding amended independent claim 1. Accordingly, the rejection of amended independent claim 1 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

B. Claims 12, 14, 15, and 17

Independent claims 12, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy* and *Gormish*. Neither *Katto*, nor *Levoy*,

nor *Gormish*, nor any obvious variant thereof, teach or suggest, *inter alia*, "a texture image decompressing device comprising . . . a light source/viewpoint direction input device inputting a viewpoint direction and a light source direction of a decompression target texture image," as recited in independent claim 12.

As the Examiner acknowledges, *Katto* fails to teach or suggest this recitation. Instead, *Katto* discloses "a decoding system . . . [in which] [d]emultiplexing means 58 multiplexes and separates a compression stream to separate the compressed data of the pickup image and the compressed data of depth representative values from each other." *Katto,* col. 11, ll. 38-43. In the system of *Katto*, "[v]iew-point determining means 63 determines a view point of a viewer to the three-dimensional image data supplied from the three-dimensional image data generating means 24 in accordance with an instruction from the viewer." *Id.* at col. 11, l. 67 through col. 12, l. 4.

At page 5, the Office Action cites *Levoy* as teaching, *inter alia*, "a texture image decompressing device comprising . . . a light source/viewpoint direction input device inputting a viewpoint direction and a light source direction of a decompression target texture image," as recited in independent claim 12. However, this is incorrect.

Instead, *Levoy* discloses a method for "[d]ecompression [which] occurs in two stages." *Levoy,* col. 13, l. 48. "In the preferred embodiment [of *Levoy*], the first stage--gzip decoding--is performed as the file is loaded into memory." *Id.* at col. 13, ll. 48-50. In dequantization, the second stage of *Levoy*, "[a]s the observer moves through the scene, the display engine . . . requests samples of the light field." *Id.* at col. 13, ll. 56-57. Thus, *Levoy* only discloses that, during decompression, light field samples are requested. *Levoy* does not teach or suggest, *inter alia*, "a texture image decompressing

device comprising . . . a light source/viewpoint direction input device inputting a viewpoint direction and a light source direction of a decompression target texture image," as recited in independent claim 12.

Gormish also fails to teach or suggest at least this recitation. Instead, *Gormish* discloses a "decompressor 204" for performing a process that uses "lossless compression." *Gormish*, col. 5, ll. 44, 51. In the decompressor of *Gormish*, "entropy decoder 218 has an input for the compressed bit stream [and] an input for a context . . . ;" "context modeller 220 has an input for receiving the result from entropy decoder 218 . . . ;" and "plane accumulator 222 has an input for accepting the color plane bits stream from context modeller 220 . . . ." *Id.* at col. 6, ll. 1-9. Thus, *Gormish* does not teach or suggest "a texture image decompressing device comprising . . . a light source/viewpoint direction input device inputting a viewpoint direction and a light source direction of a decompression target texture image," as recited in independent claim 12.

Accordingly, neither *Katto,* nor *Levoy*, nor *Gormish*, taken alone or in any reasonable combination, teach or suggest at least the above-noted recitation of independent claim 12. For at least this reason, the Office Action has not established a *prima facie* case of obviousness regarding independent claim 12. Accordingly, the rejection of independent claim 12 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

Independent claims 14 and 15, although of different scope, recite subject matter similar to that of independent claim 12. For at least the same reason as set forth above in connection with independent claim 12, the cited references cannot support a rejection of claims 14 and 15 under 35 U.S.C. § 103(a). Thus, the rejection of independent

claims 14 and 15 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claims allowed.

As stated above, claim 17 was not addressed in the Office Action, but is dependent upon claim 15. Thus, claim 17 should be allowed at least because of its dependence from allowable independent claim 15.

C. Claims 2-9

Claims 2-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy, Gormish, Namizuka*, and *Woodell*. Claim 3 has been canceled, thereby rendering the rejection of claim 3 moot.

By virtue of their dependence from amended independent claim 1, claims 2 and 4-9 call for a combination including, for example, "a separating unit configured to rearrange a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images." As stated above, neither *Katto,* nor *Levoy*, nor *Gormish*, nor any obvious variant thereof teach or suggest at least this recitation.

The Office Action cited *Namizuka* as teaching "gamma correction," and cited *Woodell* as teaching "adjusting the intensity value." Office Action, p. 6. Even assuming the Office Action's characterizations of *Namizuka* and *Woodell* are correct, assertions to which Applicants do not assent, *Namizuka* and *Woodell* also fail to teach or suggest "a separating unit configured to rearrange a plurality of texture images corresponding to a

plurality of different light source directions and a plurality of different view point directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images, and separate intensity maps . . . from the plurality of rearranged texture images," as recited in amended independent claim 1, from which claims 2 and 4-9 depend.

Thus, the cited art, taken alone or in any reasonable combination, teach or suggest at least the above-noted elements of independent claim 1, from which claims 2 and 4-9 depend. For at least this reason, the Office Action has not established a *prima facie* case of obviousness regarding claims 2 and 4-9. Accordingly, the rejection of claims 2 and 4-9 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claims allowed.

D. Claim 10

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy*. *Katto* and *Levoy* fail to teach or suggest "generating compressed textures where the first and second compressed texture images and the first and second codebooks are combined," as recited in independent claim 10.

As discussed above in connection with claim 1, *Katto* teaches an encoding system in which "two-dimensional natural images are obtained from an object in a three-dimensional space by a mono-view-point or multi-view-point imaging system to generate intensity (color brightness) maps, area maps and velocity maps, and also depth maps . . . ." *Katto*, col. 5, ll. 49-56.

While *Katto* teaches that "[m]ultiplexing means 15 multiplexes compressed data which are supplied from the image compression means 11 and the depth representative value compressing means 14, and then transmit[s] or store[s] it as a compression stream (col. 6, ll. 22-26)," *Katto* does not teach or suggest "generating compressed textures where the first and second compressed texture images and the first and second codebooks are combined," as recited in independent claim 10. In contrast, *Katto* teaches a system in which the data supplied from three data streams (e.g., data supplied from the image compression means 11, data supplied from the depth representative value compressing means 14, and data supplied from program description compression means 36) is multiplexed into a single data stream. Furthermore, *Katto* provides no teaching with respect to codebooks or the combination of codebooks. *See e.g.*, *Id.* at FIGs. 1 and 3.

Levoy fails to overcome the deficiencies of *Katto*, set forth above, including the failure of *Katto* to teach or suggest, *inter alia*, "generating compressed textures where the first and second compressed texture images and the first and second codebooks are combined," as recited in independent claim 10. Instead, *Levoy* teaches that "a light field 110 is partitioned into tiles, which are encoded using vector quantization (VQ) 112 to form an array of codebook indices." *Levoy*, col. 12, ll. 37-39. "[T]he codebook 114 and the array of indices 116 are further compressed using Lempel-Ziv (LZ) coding" to obtain an output bit stream 118. *Id.* at col. 12, ll. 40-41. Thus, Levoy teaches the compression of a single codebook with an array of indices.

For at least this reason, the Office Action has not established a *prima facie* case of obviousness regarding independent claim 10. Accordingly, the rejection of

independent claim 10 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

E. Claim 11

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto* in view of *Levoy, Gormish, Namizuka*, and *Woodell*. According to the Office Action, "claim 11 is analogous and corresponds to claims 1 and 2." Office Action, p. 7.

Independent claim 11 recites, *inter alia,* "rearranging a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different viewpoint directions into a plurality of rearranged texture images by grouping pixels included in the plurality of texture images per view point direction and coordinate on each of the texture images" and "separating, from the plurality of rearranged texture images, a plurality of intensity maps whose pixels include intensity values and a plurality of light source-independent texture images whose pixels include color components."

Similar to the reasoning discussed above in connection with claim 1, neither *Katto,* nor *Levoy*, nor *Gormish*, nor *Namizuka*, nor *Woodell* teach or suggest this recitation. For at least this reason, the Examiner has not established a *prima facie* case of obviousness regarding independent claim 11. Accordingly, the rejection of independent claim 11 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

F. Claims 13 and 16

Claims 13 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto, Levoy, Gormish,* and *Namizuka*.

By virtue of its dependence from independent claim 12, claim 13 calls for a combination including, for example, "a texture image decompressing device comprising . . . a light source/viewpoint direction input device inputting a viewpoint direction and a light source direction of a decompression target texture image." Claim 16, by virtue of its dependence from independent claim 15, calls for a combination including, for example, "a texture image decompressing method comprising . . . extracting representative intensity maps and color component conversion tables from a compressed texture into which a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different viewpoint directions have been compressed." As stated above, neither *Katto,* nor *Levoy*, nor *Gormish*, nor any obvious variant thereof teach or suggest at least these recitations.

The Office Action cited *Namizuka* as teaching "gamma correction." Office Action, p. 8. Even assuming the Office Action's characterization of *Namizuka* is correct, an assertion to which Applicants do not assent, *Namizuka* also fails to teach or suggest at least these recitations of independent claims 12 and 15, from which claims 13 and 16 respectively depend. Instead, *Namizuka* discloses that, "[i]n general, the image data is processed based upon the information on edges and intensity from a space filter process unit." *Namizuka*, ¶ 0028.

Accordingly, neither *Katto,* nor *Levoy*, nor *Gormish*, nor *Namizuka,* taken alone or in any reasonable combination, teach or suggest at least the above-noted elements of independent claims 12 and 15, from which claims 13 and 16 respectively depend. For at least this reason, the Office Action has not established a *prima facie* case of

obviousness regarding claims 13 and 16. Accordingly, the rejection of claims 13 and 16 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claims allowed.

G. Claim 18

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Levoy, Gormish*, and *Woodell*. However, *Levoy*, *Gormish*, and *Woodell* fail to teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: a first codebook field including a codebook for decompressing normalization parameters of intensity components of the texture images," as recited in independent claim 18.

The Office Action states that "Levoy discloses a computer-readable medium having stored thereon a data structure for storing a compressed texture into which a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different viewpoint directions have been compressed . . . ." Office Action, p. 9. While Applicants do not concede the Office Action's characterization of *Levoy*, Applicants note that the Office Action also states that "Levoy does not disclose or teach the other claim limitations." *Id.* Indeed, *Levoy* does not teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: a first codebook field including a codebook for decompressing normalization parameters of intensity components of the texture images," as recited in independent claim 18.

Woodell fails to overcome the deficiencies of *Levoy*, as discussed above. The Office Action states that "Woodell teaches adjusting the intensity values, which can be a process of normalization." *Id.* While *Woodell* may disclose that "[o]n a pixel-by-pixel

basis, processor 12 adjusts the intensity . . . (¶ 0028)," *Woodell* does not teach or suggest "[a] computer-readable medium having stored thereon a data structure . . . comprising: a first codebook field including a codebook for decompressing normalization parameters of intensity components of the texture images," as recited in independent claim 18.

Gormish fails to overcome the deficiencies of *Levoy* and *Woodell*, as set forth above, including the failure of *Levoy* and *Woodell* to teach or suggest "[a] computer-readable medium having stored thereon a data structure . . . comprising: a first codebook field including a codebook for decompressing normalization parameters of intensity components of the texture images," as recited in independent claim 18.

Instead, *Gormish* teaches a compressor 202 and decompressor 204 to implement a process of lossless compression and decompression. *See Gormish*, col. 5, ll. 44, 51. According to *Gormish*, "file 206 is compressed to file 208 beforehand, and file 208 is provided to a WWW server and thus made available to users of WWW browser clients." *Id.* at col. 6, ll. 10-13. "Because decompressor 204 must be able to reconstruct the image from the coded (compressed) image, only pixels which were previously coded can be used as context pixels for a current pixel." *Id.* at col. 6, ll. 33-36. "As is well known, pixels nearby the current pixel provide a useful context when coding the current pixel." *Id.* at col. 6, ll. 36-38. Thus, *Gormish* also fails to teach or suggest "[a] computer-readable medium having stored thereon a data structure . . . comprising: a first codebook field including a codebook for decompressing normalization parameters of intensity components of the texture images," as recited in independent claim 18.

Accordingly, neither *Levoy*, nor *Woodell*, nor *Gormish*, taken alone or in any reasonable combination, teach or suggest at least the above-noted elements of independent claim 18. For at least this reason, the Examiner has not established a *prima facie* case of obviousness regarding independent claim 18. Accordingly, the rejection of claim 18 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

H. Claim 19

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Katto, Levoy, Gormish*, *Namizuka*, *Woodell*, and *Gossett*. The cited art fails to teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19.

The Office Action states that "Katto discloses a computer-readable medium having stored thereon a data structure for storing a compressed texture into which a plurality of texture images corresponding to a plurality of different light source directions and a plurality of different viewpoint directions have been compressed . . . ." Office Action, p. 10. While Applicants do not concede the Office Action's characterization of *Katto*, Applicants note that the Office Action also states that "Katto does not disclose or teach the other claim limitations." *Id.* Indeed, Applicants agree that *Katto* does not teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field

including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19.

Levoy fails to overcome the deficiencies of *Katto* as set forth above, including the failure of *Katto* to teach or suggest at least this recitation. Instead, *Levoy* teaches a two-stage method for decompression which, "[i]n the preferred embodiment, the first stage--gzip decoding--is performed as the file is loaded into memory." *Id.* at col. 13, ll. 48-50. In dequantization, the second stage of *Levoy*, "as the observer moves through the scene, the display engine . . . requests samples of the light field." *Id.* at col. 13, ll. 56-57. Thus, *Levoy* only teaches that, during decompression, light field samples are requested. *Levoy* does not teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19.

Gormish fails to overcome the deficiencies of *Katto* and *Levoy*, as set forth above, in that *Gormish* also fails to teach or suggest at least this recitation. Instead, *Gormish* teaches a "decompressor 204" for performing a process that uses "lossless compression." *Gormish*, col. 5, ll. 44, 51. In the decompressor of *Gormish*, "entropy decoder 218 has an input for the compressed bit stream [and] an input for a context . . . ;" "context modeller 220 has an input for receiving the result from entropy

decoder 218 . . . ;" and "plane accumulator 222 has an input for accepting the color plane bits stream from context modeller 220 . . . ." *Id.* at col. 6, ll. 1-9.

Namizuka fails to overcome the deficiencies of *Katto*, *Levoy*, and *Gormish*, as disclosed above, and the failure of *Katto*, *Levoy*, and *Gormish* to teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19.

Instead, "[i]n the preferred embodiment of the image processing apparatus according to the current invention [of *Namizuka*] . . . [a]n operation unit 32 allows a user or an external unit to specify an operation mode or a processing mode as well as operation or intensity correction parameters." *Namizuka,* ¶ 0026. According to *Namizuka,* "[i]n general, the image data is processed based upon the information on edges and intensity from a space filter process unit." *Id.* at ¶ 0028.

Woodell fails to overcome the deficiencies of *Katto*, *Levoy*, *Gormish*, and *Namizuka*, as set forth above, including the failure of *Katto*, *Levoy*, *Gormish*, and *Namizuka* to teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19. In contrast,

Woodell discloses that "[o]n a pixel-by-pixel basis, processor 12 adjusts the intensity . . ." *Woodell*, ¶ 0028.

Gossett fails to overcome the deficiencies of *Katto*, *Levoy*, *Gormish*, *Namizuka*, and *Woodell*, as set forth above, including the failure of these references to teach or suggest, *inter alia*, "[a] computer-readable medium having stored thereon a data structure . . . comprising: an intensity map correction compressed image field including intensity map correction compressed images in which intensity map correction images for decompressing intensity components from normalized intensity components have been compressed," as recited in independent claim 19. Instead, *Gossett* discloses that "[t]he texture memory and a texture filter of the graphics rendering system are used to perform look-up table operations as well as multiply and accumulate operations typically associated with image processing." *Gossett*, Abstract.

Thus, none of the cited art, taken alone or in any reasonable combination, teach or suggest at least the above-noted elements of independent claim 19. For at least this reason, the Office Action has not established a *prima facie* case of obviousness regarding independent claim 19. Accordingly, the rejection of claim 19 under 35 U.S.C. § 103(a) is improper, should be withdrawn, and the claim allowed.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

In addition, the Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statements are identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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Dated: November 7, 2007

By: David M. Longo, Reg. #53,235, for
Richard V. Burgujian
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Attachment: Replacement Abstract of the Disclosure